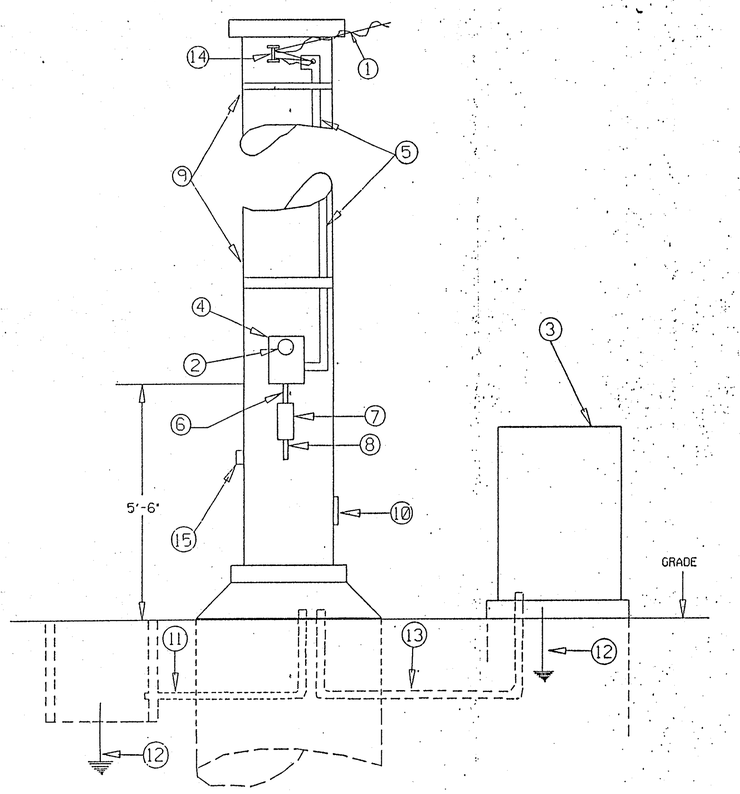
F.H.W.A. REGION NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	MD	SEE TITLE SHEET	141	169

OVERHEAD ELECTRICAL POWER CONNECTION

CABINET MOUNTING: BASE MOUNTING
TRAFFIC CONTROL DEVICES: SIGNAL & LIGHTING



CONSTRUCTION DETAILS

POWER COMPANY FURNISHES AND INSTALLS:

1. *Overhead electric service feed*
2. *Watthour meter*

CONTRACTOR FURNISHES AND/OR INSTALLS:

3. *State Highway Administration furnished controller cabinet.*
4. *Mount power company furnished, 100 ampere rated size, meter socket with two (2) 1/4" UNC stainless steel bolts with lock washers drilled and tapped through the meter socket back into the steel pole. The bolt locations shall be centered on the meter socket back at one inch above the bottom and one inch below the top.*
5. *Place 1 1/4" galvanized steel rigid conduit for service riser. Place a bend above the 1 1/4" "LB" conduit body to allow the riser to be flush and vertical to the pole. Place a 1 1/4" by shouldered length galvanized steel rigid conduit nipple on the "LB" conduit body end entering the meter socket's lowest right side opening. Place double lock nuts on the nipple end entering the meter socket side followed by an insulating bonding bushing. Place weatherhead at 12" below pole top. Band riser to pole with 3/4" stainless steel bands at 12" above the meter socket, 12" below the weatherhead and at 60" maximum intervals in-between. Place three (3) individual # 4 AWG copper type THWN wires from the meter socket line side terminals to the weatherhead. (Colored white for AC neutral, black for one side of the AC+ and red for the remaining AC+ side.) Leave 24" tail for each wire connection at weatherhead.*
6. *1 1/4" by 4" galvanized steel rigid conduit nipple into an insulated bonding Myers type hub with integral gasket mounted onto the disconnect switch top. The nipple shall enter the meter socket center, then if not available the right-most, bottom opening and shall enter the disconnect switch at equal to the meter socket back to nipple centerline opening dimension, and also to the same lateral orientation to the steel pole centerline, as the meter socket nipple opening centerline to steel pole centerline dimension. Place double lock nuts on the nipple end entering the meter socket bottom followed by an insulated bonding bushing. Place three (3) individual # 4 AWG copper type THWN wires from the meter socket load side terminals to the disconnect switch line side terminals. (Colored white for AC neutral; black for one side of the AC+ and red for the remaining AC+ side.)*
7. *Mount disconnect switch with two (2) 1/4" UNC stainless steel bolts with lock washers drilled and tapped through the disconnect switch back into the steel pole. The bolt locations shall be centered on the disconnect switch back at one inch below the top and one inch above the bottom.*
8. *1 1/4" "LB" conduit body into steel pole. Place 1 1/4" by shouldered length galvanized steel rigid conduit nipples on both "LB" conduit body ends. Locate the disconnect switch nipple opening to allow the "LB" conduit body to be flush to the pole face upon installation and centered in respect to the disconnect front cover. Place double lock nuts on the nipple end entering the disconnect switch bottom followed by an insulated bonding bushing.*
9. *State Highway Administration furnished steel pole.*
10. *Orient electrical service equipment to hand hole as shown.*
11. *Use conduit from steel pole to nearest hand box for grounding conductor installation.*
12. *Ground rod with one piece cast bronze ground rod clamp. Bonding shall be by a single continuous # 6 AWG bare stranded copper wire run from controller cabinet grounding bar, to through the controller cabinet ground rod clamp, through the direct conduit from the steel service pole, to through the insulated bonding bushing lug on the meter socket side nipple, to through the insulated bonding bushing lug on the meter socket bottom nipple, to through the Myers hub insulated bonding bushing lug on the disconnect switch top nipple, to through the disconnect switch neutral bar, to through the insulated bonding bushing lug on the disconnect switch bottom nipple, to the steel pole grounding lug to the nearest hand box ground rod clamp.*
13. *Use direct conduit from steel pole to controller cabinet for grounding conductor and service wire installation. Place two (2) individual # 4 AWG copper type THWN wires from the disconnect switch load side terminals to the controller cabinet terminals. (Colored white for AC neutral, black for one side of the AC+.)*
14. *Band service clevis to pole with two (2) with 3/4" stainless steel bands at 18" below steel pole top. Orient in the direction of the overhead service feed.*
15. *Orient electrical service equipment to coupling as shown.*

NOTES:

A. *Equipment indicated to be State Highway Administration furnished may be contractor furnished. Refer to Equipment Lists for each item noted.*

B. *All exposed galvanized steel rigid conduit ends shall be wire brushed, cleaned of any residue, and an inorganic zinc compound applied.*

C. *All galvanized steel rigid conduit insulated bonding bushings shall have bonding lugs of "lay-in" type design.*

D. *All conduit bodies for use with galvanized steel rigid conduit shall be cadmium plated malleable iron with neoprene gaskets, sheet aluminum covers and stainless steel cover bolts.*

E. *If power company furnished meter socket is furnished with a flat plate type hub mounted onto the top of the meter socket, delete the above # 5 in lieu of the following: Place 1 1/4" galvanized steel rigid conduit riser into a flat plate type hub with integral gasket mounted onto the top of the meter socket. Place offset bends above disconnect switch to allow the riser to be flush to the pole. Place weatherhead at 12" below pole top. Band riser to pole with 3/4" stainless steel bands at 12" above the meter socket, 12" below the weatherhead and at 60" maximum intervals in-between. Place three (3) individual # 4 AWG copper type THWN wires from the meter socket line side terminals to the weatherhead. (Colored white for AC neutral, black for one side of the AC+ and red for the remaining AC+ side.) Leave 24" tail for each wire connection at weatherhead.*

F. *If power company furnished meter socket is furnished with a flat plate type hub mounted onto the top of the meter socket, delete the above # 12 in lieu of the following: Ground rod with one piece cast bronze ground rod clamp. Bonding shall be by a single continuous # 6 AWG bare stranded copper wire run from controller cabinet grounding bar, to through the controller cabinet ground rod clamp, through the direct conduit from the steel service pole, to through the insulated bonding bushing lug on the meter socket bottom nipple, to through the Myers hub insulated bonding bushing lug on the disconnect switch top nipple, to through the disconnect switch neutral bar, to through the insulated bonding bushing lug on the disconnect switch bottom nipple, to the steel pole grounding lug to the nearest hand box ground rod clamp.*

G. *If mast arm placement will not allow riser placement as indicated in # 5 or Note E, delete the above # 5 in lieu of the following: Place 1 1/4" galvanized steel rigid conduit for service riser. Place a bend above the 1 1/4" "LR" conduit body to allow the riser to be flush and vertical to the pole. Place a 1 1/4" by shouldered length galvanized steel rigid conduit nipple on the "LR" conduit body end entering the meter socket's lowest left side opening. Place double lock nuts on the nipple entering end the meter socket side followed by an insulating bonding bushing. Place weatherhead at 12" below pole top. Band riser to pole with 3/4" stainless steel bands at 12" above the meter socket, 12" below the weatherhead and at 60" maximum intervals in-between. Place three (3) individual # 4 AWG copper type THWN wires from the meter socket line side terminals to the weatherhead. (Colored white for AC neutral, black for one side of the AC+ and red for the remaining AC+ side.) Leave 24" tail for each wire connection at weatherhead.*

APPROVALS	REVISIONS
CHIEF, DESIGN SECTION	
ASST. DISTRICT ENGINEER, TRAFFIC	
CHIEF, TRAFFIC ENGINEERING DESIGN DIVISION	
DIRECTOR, TRAFFIC & SAFETY	

MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION
OVERHEAD ELECTRICAL POWER CONNECTION

DRAWN BY: ATRI AMIN	F.A.P. NO.	SEE TITLE SHEET	PLAN SHEET NO.:	SHEET NO.
CHECK BY: MORTEZA TADAYON	S.H.A. NO.	M 528-503-371	B-14	141 OF 169
SCALE: NONE	COUNTY			